What Do You Think Goes Into Developing Games?

- Consider a computer game you want to build (or, one you like that has been built)
- Assume you are inspired (or forced or paid) to engineer the game
- Take 3-4 minutes to write a list of the tasks required
  - Chronological or hierarchical, as you wish
  - Include your name and name of game
    - (I’ll collect and read, but not grade)
- What do we have?

IMGD 1001 - The Game Development Process: Introduction

by

Mark Claypool (claypool@cs.wpi.edu)
Robert W. Lindeman (gogo@wpi.edu)
What to Expect

- This course is mainly about the process of successfully bringing a game from idea to delivery
  - Major "players" in the process
  - Steps in the development lifecycle
  - What makes a good (and bad!) game

- Presupposed background
  - Not much!

- Nice to have
  - Gaming experience in a few genres

Today's Topics

- Background
- Course Topics
- Course Materials
- Motivation
Instructor Background
(Who Are We?)

Dr. Mark Claypool (Prof, “Mark”)
- Computer Science
  - Operating Systems, Distributed Computer Systems, Multimedia, Networks
  - Director of the IMGD program
  - The Game Development Process
  - Technical Game Development

Research interests
- Networks, Multimedia, Network games, Performance

Like to play
- Real-time Strategy (Battle for Middle Earth, Warcraft, …)
- Sports (FIFA, Madden, Strikers, …)
- First Person Shooters (Battlefield, Doom, …)
- Adventure (Uncharted, Indigo Prophecy, …)

Dr. Rob Lindeman (Professor, "Rob")
- Computer Science
- Like to play
  - Driving games (NFS, Ridge Racer)
  - Platformers (Oni, Onimusha, Prince of Persia)
  - Rhythm games (Guitar Hero, Oendan)
  - Real FPS, with alternate input/output devices (TimeCrisis)

Research interests
- Virtual Reality, Immersive User Interface, Computer Graphics, HCI, Large-Scale Virtual Worlds, Evaluation and User Studies
Student Background
(Who Are You?)

- Year (freshman, sophomore, ...)
- Major (IMGD (Art or Tech), CS, HUA, ...)
- Programming Classes
- Gamer: (casual) 1 to 5 (hard-core)
- Number of Games Built (zero is ok)
- Other ...

Syllabus Stuff

http://www.cs.wpi.edu/~imgd1001/a08/

- Office hours:
  - TBA (about 3 per week each)
  - See Web page

- Email:
  - {gogo, claypool, pgb, tjloughl} at cs.wpi.edu
  - id111x-ta at cs.wpi.edu
  - id111x-all at cs.wpi.edu

- GDC Forums
  - IMGD 1001 forum: http://forums.gdc.wpi.edu/
  - For discussions, announcements ...
Course Materials

- Slides
  - On the Web (PDF)
  - Caution! Don’t rely upon the slides alone! Use them as supplementary material
    - (come to class!)

- Timeline
  - Tentative planning

- Project writeups

- Resources
  - Game creation toolkits, documentation, etc.

Text Books

- Main text:
  - The Game Development Process
    - Written by lots of people, edited by Steve Rabin
    - Close to course material, required for this class
    - 1000 pages! But good reference

- Supplemental texts:
  - Game Architecture and Design - A New Edition
    - by Andrew Rollings and Dave Morris
    - Heavily used for design
  - On Game Design
    - by Andrew Rollings and Ernest Adams
    - Some solid game design material
  - Designing Arcade Computer Game Graphics
    - by Ari Feldman
    - Creating 2D art for games
  - Creating the Art of the Game
    - by Matthew Omernick
    - Creating 3D art for games
  - Maybe some other articles (i.e. Gamasutra) as needed…
Course Structure

- **Prerequisites**
  - None!
  - Neither Programming nor Art

- **In-Class**
  - Lecture
  - Discussion
  - Exercises
  - Exams

- **Out-of-Class**
  - Reading
  - Projects

- **Grading**
  - Exams (40%)
  - Projects (60%)

(More on Exams and Projects, next)

Exams

- 2 exams
- 40% of grade
- Non-cumulative
- Closed-note
- Closed-paper
- Closed-friend
Projects (1 of 2)

- About 7 projects
  - 3 are tutorials with some "add ons"
  - 4 are original, made from "scratch"
- 60% of your grade
- Groups (3 is good, 2 or 4 are possible)
- Apply concepts taught in class
- Related to Game Development
- Build upon each other
  - Should have working game at end!
  - Add this to your portfolio
- 10% penalty on late projects

Projects (2 of 2)

- Project 4: Game Inception and Design
  - Inspiration of a game, design and documentation
- Project 5: Content Creation
  - Create 2-d animated sprites (or other art) and select supporting content
- Project 6: Game Logic
  - Implement game objects and game rules
- Project 7: Level Design
  - Put above components together in compelling game
- Project pitch
  - To panel of experts
Course Topics

- Game Industry
  - Structure
  - Major actors
  - Trends
- Game Design
  - The Creative Process
  - Design Documentation
- Artistic Content Creation
  - Color and Displays
  - 2D and 3D
    - Graphics
    - Animation
  - Audio
    - Music
    - Sound Effects
- Introduction
  - Team
  - Timeline
  - Size and Shape
- Engineering
  - Game Architectures
  - Programming
- Production, etc.
  - Release
  - Postmortem

Why This Class?

- IMGD requirements (Core Course, see www.wpi.edu/+IMGD)
- Introduction to steps of Game Development
  - In depth in Area
- Fun! ("passion for games")
First Year Advice – your “Job”

- High school is different than college!
- Go to class!
  - Think of your classes as your full-time job
  - First-year grades pave way to grades in subsequent years
- Make a study schedule early
  - WPI expects 3-4 hours study for each hour of class (i.e. 17 hours per class, so ~54 hours)
  - Maybe a time management calendar

First Year Advice – the Syllabus

- Read syllabus for each class
  - Key to performing successfully!
- Some key things to note:
  - Grading policy
  - Attendance policy
  - Professor/TA name, location and office hours
  - Learning outcomes and course expectations
  - Deadlines for course requirements
First Year Advice – ask Questions

- Help is there, but you must ask
- Office hours
- Discussion forums
- Peers
- Tutoring
- Online help
- Especially important in later classes

First Year Advice – get Involved

- Involvement in campus organizations/events is an important part of your education!
- Find out what is going on campus
  - [http://www.wpi.edu/Admin/SAO/Orgs/](http://www.wpi.edu/Admin/SAO/Orgs/)
- Balance this with your classes
First Year Advice – Resources

- Academic advising
- Counseling center
  - http://www.wpi.edu/Admin/SDCC/
- Professors
- Tutoring services
  - Specific for major/class (i.e. ACM and GDC)
- Career development center
  - http://www.wpi.edu/Admin/CDC/